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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,771	12/09/2003	John R. Bennett	1761	6950

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Law Offices of Albert S. Michalik, PLLC  
Suite 193  
704-228th Avenue NE  
Sammamish, WA 98072

EXAMINER

PHAM, HUNG Q

ART UNIT PAPER NUMBER

2168

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/732,771	<b>Applicant(s)</b> BENNETT ET AL.	
	<b>Examiner</b> HUNG Q. PHAM	<b>Art Unit</b> 2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

- Claim 6 has been amended by applicants to obviate the § 112 rejection.

The rejection of claim 6 under 35 U.S.C. § 112, second paragraph, has been withdrawn.

- Applicant's arguments filed 10/11/2005 have been fully considered but they are not persuasive.

1. As argued by applicants at page 7, lines 10-20:

*In contrast, claim 1 recites determining that the node includes a tag flag having a setting indicative of a multiple tag field attached to the node.*

...

*The Office action contends that one method of using a tag flag and another method of using an enumeration count constitutes knowing how to determine that the node includes a tag flag having a setting indicative of a multiple tag field attached to the node. This is simply flawed logic. Not only does the disclosure in the background not teach a multiple tag field, but disclosing a tag flag method and an enumerated count method still would not teach the combination of a tag flag method and an enumerated count method.*

Examiner respectfully traverses.

Either a tag flag set or enumerated list is used to determine a word is a valid word. If the word is valid, two bit fields attached to the node is used to determine the category of the node as illustrated at page 4, lines 18-24. As disclosed at page 4, lines 18-24 of the Background, if a language has gender associated with certain words, separately tagging can be done by setting aside additional bits in each node for each additional subset, e.g., one bit for gender or not, one bit for male or female. Thus, to

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determine if the word is whether gender or not, two bits fields attached to the node is used as *tag flag having a setting indicative of a multiple tag field*.

2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *the method of claim 1 may have a multiple tag field that comprises more than one association such as an association with synonyms as well as a separate association with antonyms...Further more, claim 1 recites evaluating... That is, a word may be associated simultaneously with several different categories of words, such as being a slang term and a proper name*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. As argued by applicants at page 9, lines 11-16:

*... the combination of the Background with Knuth as cited in the §103 rejections, also fails to teach or even suggest the recitations of the respective rejected dependent claims cited by the Office action. Simply put the prior art of record, whether considered as individual references or in any permissible combination with each other, still fails to teach or suggest the recitations of claims 2-8.*

*For example, claim 4 recites evaluating information in a header of the tie to determine a size of the bitmask. The Office action contends that this is nothing more than commonly known programming standards at the time by reference to the Knuth disclosure. Simply showing that using bitmasks and headers are well-known in the art does not rise to the level of proper motivation to combine teachings as is required to establish a prima facie case for obviousness.*

Examiner respectfully traverses.

Knuth discloses the structure of a node of a trie and further discloses the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500. Thus, the structure of a trie node is a must to search for a particular key word.

For the above reasons, Examiner believed that rejection of the last Office action was proper.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 1 and 9-11 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the Admission [BACKGROUND OF THE INVENTION, pages 1-4].**

Regarding claims 1 and 11, as in the background of the application is a computer-implemented method and program for decompressing a trie (Background, page 1, line 22-page 2, Line 3) including:

*evaluating a node of the trie* (as illustrated at page 1, Lines 22-page 2, Line 10, to determine the word *the* is a valid word, a node is evaluated);

*determining that the node includes a tag flag having a setting indicative of a multiple tag field attached to the node* (if a language has gender associated with certain words, separately tagging can be done by setting aside additional bits in each node for each additional subset, e.g., one bit for gender or not, one bit for male or female (page 4, lines 18-24). Thus, to determine if the word is whether gender or not, two bits fields attached to the node is used as *tag flag having a setting indicative of a multiple tag field*); and

*evaluating each setting in the multiple tag field* (page 4, lines 18-24, the first bit is evaluated to determine if the word is gender or not, and the second bit is evaluated to determine if the word is male or female), and

*for each setting that indicates a tag, associating the node with a category corresponding to that tag* (based on the setting that indicates a tag, e.g., 00 or 10 or 11, the node is associated with a category corresponding to that tag, e.g., no gender, male, female).

Regarding claim 9, as disclosed in the Background of The Invention, *the node includes at least one partial enumeration count* (page 4, lines 18-24).

Regarding claim 10, as disclosed in the Background of The Invention, *the node includes a partial enumeration count for at least one of the tags* (each word in the word list is tagged by a particular key, and each word is mapped to a global enumeration, page 3).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admission [BACKGROUND OF THE INVENTION, pages 1-4] in view of Knuth [The Art of Computer Programming].**

Regarding claim 2, the Background of The Invention does not have the step of *evaluating a tag information field to determine that the trie was constructed to have at least one node with a multiple tag field*. Knuth teaches a method for decompressing a trie and further discloses the step of *evaluating a tag information field to determine that the trie was constructed to*

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*have at least one node with a multiple tag field* (as disclosed by Knuth at page 499, a Patricia trie consists of a header and N-1 nodes, where the nodes contain several fields. The header is represented by a plurality of particular bit long, where each bit long corresponding to a particular field, e.g., KEY, LLINK, and LTAG, and LTAG is one bit field that tells whether or not LLINK pointing to a particular node. Thus, to search for particular key words in Patricia trie, LTAG as *tag information field* is evaluated to determine whether *a node with multiple tag fields* exists or not). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of evaluating tag information as taught by Knuth into the decompressing method as disclosed in the background in order to search for a particular key word.

Regarding claim 3, the Background of The Invention does not have *a bitmask, and wherein evaluating each setting in the multiple tag field comprises checking the value of each bit in the bitmask*. Knuth teaches a method for decompressing a trie and further discloses *a bitmask, and wherein evaluating each setting in the multiple tag field comprises checking the value of each bit in the bitmask* (as disclosed at page 499, the fields LLINK, RLINK, LTAG, RTAG, SKIP are bitmasks and each bit of the field would be checked to search for a particular key word). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of checking the value of bitmask as taught by Knuth into the decompressing method as disclosed in the background in order to search for a particular key word.



Regarding claim 4, the Background of The Invention does not have the step of *evaluating information in a header of the trie to determine a size of the bitmask*. Knuth teaches a method for decompressing a trie and further discloses the step of *evaluating information in a header of the trie to determine a size of the bitmask* (the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of evaluating the header of the trie in order to search for a particular key word.

Regarding claim 5, the Background of The Invention does not have the step of *checking a value field to determine which tags have values associated therewith*. Knuth teaches a method for decompressing a trie and further discloses the step of *checking a value field to determine which tags have values associated therewith* (the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of checking a value field as taught by Knuth into the decompressing method as disclosed in the background in order to search for a particular key word.

Regarding claim 6, the Background of The Invention does not have the step of *at least one of the tags has a value associated therewith, and checking a value size array field to determine a size for each value associated with a tag*. Knuth teaches a method for decompressing a trie and further discloses *at least one of the tags has a value associated therewith, and checking a value size array field to determine a size for each value associated with a tag*

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(the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of checking a value size array as taught by Knuth into the decompressing method as disclosed in the background in order to search for a particular key word.

Regarding claim 7, the Background of The Invention does not have the step of *checking a value size array field to determine which tags have values associated therewith*. Knuth teaches a method for decompressing a trie and further discloses the step of *checking a value size array field to determine which tags have values associated therewith* (the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of checking a value size array as taught by Knuth into the decompressing method as disclosed in the background in order to search for a particular key word.

Regarding claim 8, Knuth further discloses the step of *checking the value size array field to determine a size for each value associated with a tag* (the technique of searching THE with bit pattern 10111 01000 00101 at pages 499-500).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JEFFREY A. GAFFIN can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HUNG Q PHAM  
Examiner  
Art Unit 2168

December 16, 2005



SHAHID ALAM  
PRIMARY EXAMINER